REMARKS/ARGUMENTS

Form PTO-2038 for the sum of $600.00 is attached to cover the Patent Office fee for filing 3 extra independent claims. If any further fees are required, authorization is given to charge same against Account No. 06-1378.

Claims 3 and 7-9 are amended to introduce the features which were incorporated by reference to an earlier claim. Withdrawal of the formal objection on this ground is requested.

A "reflection support" has been added to the claims. This is based on the specification disclosure e.g. at page 20, line 6.

A change in the R_1 and R_2 definitions was made at page 4 and also in the claims at claim 1, and other claims where formula (1) has been introduced. This corrects a clerical error which occurred when translating the priority application. A copy of the relevant portions of the priority application is attached in support of this change. Support is shown at handwritten arrows.

The present invention as claimed is directed to a silver halide photographic material used for prints and specifically suitable for printing through digital exposure, and an image forming method by use thereof through digital exposure and

processing to make prints. As described in the present specification, when forming a composition of both image and text information in silver halide photographic material using digital exposure, a problem arises in that text quality, specifically, sharpness of line images, tended to be deteriorated. Thus, image formation using silver halide photographic material was often affected by characteristics of silver halide or additives.

As described at page 8 of the specification, one novel aspect of the invention concerns that when a silver halide photographic material comprising a specific constitution was subjected to digital exposure and photographic processing, and the white area of the processed photographic material exhibited perception chromaticity indexes "a" of from 0.0 to +2.0 and "b" of from -4.0 to -2.2 (measured according to the method described in JIS-Z-8722 and defined in JIS-Z-8730) improved clearness of line images was achieved. Silver halide photographic materials for printing often have usually performed image formation wherein perception chromaticity indexes a and b fall within the range of from 0.0 to +2.0 and from -1.5 to +1.0, respectively. However, having the perception chromaticity indexes a and b fall within the range of from 0.0 to +2.0 and from -4.0 to -2.2,

respectively, results in unexpectedly superior sharpness of line images.

Turning to the substantive rejection, claims 1-16 are rejected as being anticipated by Takahashi. The Examiner states that Takahashi discloses an image forming method comprising the steps of exposing a silver halide photographic material, and processing the silver halide photographic material, wherein the processes photographic material exhibits chromaticity indexes "a" and "b" inclusive of the instant range (claim 5). Applicants disagree with the Examiner's interpretation of Takahashi and its applicability to the present claims.

Takahashi teaches a silver halide photographic material improved in whiteness in the white background, including droplets containing a dispersion of at least one blue pigment, thereby making tint correction of the white background. Thus, to make the white background look as white as possible, the pigment is incorporated in the layer to compete with yellow stain in tint which is due to various additives contained in the silver halide photographic material. Takahashi further teaches (in claim 5) a silver halide photographic material in which a resultant hue of unexposed portion after development processing, satisfies the

following relationship:

L*>88, -2<a*<2 and -2<b*<2.

Apparently, b* of Takahashi does not fall within the claimed range of "b" of from -2.2 to -4.0 (or from -4.0 to -2.2). Contrary thereto, as described above, the present invention aims at providing a forming images with superior clearness (or sharpness) of a line image using a silver halide photographic material. Forming a white background exhibiting indexes a and falling within the claimed range results in enhanced clearness of line images. Accordingly, the present invention targets a hue having a range different from that of Takashi. Therefore, Takahashi does not teach or suggest anything with respect to the claimed chromaticity index "b".

Claims 1-16 are further rejected as being anticipated by or obvious over Suematsu. Suematsu discloses a silver halide photographic material employed as X-ray film for medical use, having a subbing layer containing a specific dye for improving sharpness. In particular, Suematsu concerns an X-ray film support, in which the support is a transparent polyethylene terephthalate and a subbing layer is provided on both surfaces of the support (see, col. 1 line 5-20). Although the Examiner

recognizes that Suematsu does not teach the chromaticity indexes "a" and "b" of the processed photographic material, she asserted that the processed photographic material of Suematsu inherently possesses the chromaticity indexes "a" and "b" falling within the range as claimed. It is further asserted that even if the processed photographic material does not possess the claimed chromaticity indexes "a" and "b", it would have been obvious to one of ordinary skill in the art was made to process the photographic material in order to achieve a satisfactory visual whiteness and image quality, with reasonable expectations of achieving the advantages taught therein.

However, applicants also disagree with the Examiner's interpretation of Suematsu and its applicability to the present claims. Furthermore, the Examiner's reasoning is insufficient for the presently amended claims, based on the following reasoning.

The silver halide photographic material of the invention comprises a nontransparent reflection support and the white area of the processed photographic material exhibits the claimed chromaticity indexes "a" and "b". Thus, the white area is formed on the nontransparent reflection support.

On the contrary, the silver halide photographic material taught by Suematsu comprises a transparent film support, as described above, and having thereon at least one light-sensitive silver halide emulsion layer and at least one subbing layer containing a specific dye of Formula (II), having an antihalation function to improve sharpness. The processed photographic material has a transparent image area and a transparent background area, thus, a white area never exist therein. Therefore, the processed photographic material of Suematsu cannot achieve visual whiteness since no white background area exists therein. It is further noted that Suematsu is silent with respect to digital exposure or scanning exposure with a light beam, as claimed in the invention.

There is a formal objection to the claims concerning certain terms. More specifically, the Examiner objects "a" and "b" defined in JIS-Z-8730 and measured in accordance with JIS-Z-8722. As described in the specification at page 9, line 3-10, the perception chromaticity indexes a and b refer to lightness index L and perception chromaticity indexes a and b in CIELAB, i.e., L*a*b* color system. Color difference using the CIELAB color difference formula is defined in the filed JIS-Z-87302002 at

page 3, sect. 7.1. It is submitted that L*, a* and b* are detailed in another JIS-Z-8730[1980] at page 2-3, sect. 6. Enclosed is a copy of the relevant portion thereof. It is further noted that the measuring method is set forth in the filed JIS-Z-8722[2000] at page 4, sect. 5.3. Finally, these terms are known in the art and appear e.g. in Takahashi et al USP 6,686,137 which is distinguished from the present invention in the discussion hereinabove with respect to these parameters.

In view of the above, it is submitted that the present invention is not shown or suggested by the cited art. Withdrawal of the rejections and allowance of the application are respectfully requested.

Respectfully submitted,

Frishauf, Holtz, Goodman
& Chick, P.C.
220 Fifth Ave., 16th Floor
New York, NY 10001-7708
Tel. No. (212) 319-4900
Fax No.: (212) 319-5101
MJC/ld

MARSHALL J. CHICK
Reg. No. 26,853

Encs. 1) Relevant Portion of JIS-Z-8730[1980]

2) Copy of relevant portions of the priority application marked to indicate support.

3) FORM PTO-2038 for $600.00 for 3 extra independent claims

UDC 535.646

JIS

This standard was revised in 3, 1995

JAPANESE INDUSTRIAL STANDARD

Method for Specification of Colour Differences for Opaque Materials

JIS Z 8730—1980

Translated and Published

by

Japanese Standards Association

Printed in Japan

13S

3. Kinds of Colour Difference Formulae

The kinds of colour difference formulae shall be as follows:

(1) Colour difference formula based on the $L^*a^*b^*$ colour system.

(2) Colour difference formula based on the $L^*u^*v^*$ colour system.

(3) Other colour difference formulae.

(a) Adams-Nickerson's colour difference formula.

(b) Hunter's colour difference formula.

4. Method of Finding Colour Difference

The colour difference of surface colours shall be obtained by using either of the colour difference formulae specified in 6. from the results of measuring surface colours by the same apparatus and under the same conditions according to the spectrophotometric colorimetry or photoelectric tristimulus colorimetry specified in JIS Z 8722 or JIS Z 8727.

5. Measuring Methods for Surface Colour

5.1 Spectrophotoelectric Colorimetry Where measurement is performed according to the spectrophotoelectric colorimetry, the specifications of JIS Z 8722 or 4. of JIS Z 8727 shall be applied.

5.2 Photoelectric Tristimulus Colorimetry Where the photoelectric tristimulus colorimetry is employed, the specifications of JIS Z 8722 or 5. of JIS Z 8727 shall be applied. However, the photoelectric colorimeter used for measurement may be of the type which obtains $L^*\cdot a^*\cdot b^*$, $L^*\cdot u^*\cdot v^*$, $V_x\cdot V_y\cdot V_z$, $L\cdot a\cdot b$ and the like directly from the meter indication.

Remark: The photoelectric colorimeter should desirably have such an accuracy that the colour difference measured thereby is within one colour unit against the colour difference measured by the spectrophotometric colorimetry specified in 5.1.

6. Calculation Method for Colour Difference

6.1 Colour Difference Based on $L^*a^*b^*$ Colour System The colour difference based on the $L^*a^*b^*$ colour system shall be calculated from the following formula:

$$\Delta E^*_{ab}=[(\Delta L^*)^2+(\Delta a^*)^2+(\Delta b^*)^2]^{1/2} \quad \cdots\cdots(1)$$

where ΔE^*_{ab}: colour difference based on $L^*a^*b^*$ colour system

ΔL^*, Δa^*, Δb^*: differences in psychometric lightness L^* and psychometric chroma coordinates a^* and b^* between two material colours in the $L^*a^*b^*$ colour system specified in JIS Z 8729.

The values of L^*, a^* and b^* shall be calculated from the tristimulus values X, Y, and Z specified in JIS Z 8722 and JIS Z 8727 according to the following formulae:

$$L^* = 116(Y/Y_n)^{1/3} - 16 \quad Y/Y_n > 0.008856 \qquad \text{(2)}$$

$$\left.\begin{aligned} a^* &= 500[(X/X_n)^{1/3} - (Y/Y_n)^{1/3}] \quad X/X_n > 0.008856 \\ b^* &= 200[(Y/Y_n)^{1/3} - (Z/Z_n)^{1/3}] \quad Y/Y_n > 0.008856 \\ & \qquad\qquad\qquad\quad Z/Z_n > 0.008856 \end{aligned}\right\} \qquad \text{(3)}$$

where L^*: psychometric lightness based on $L^*a^*b^*$ colour system

a^*, b^*: psychrometric chroma coordinates based on $L^*a^*b^*$ colour system

X, Y, Z: tristimulus values based on XYZ system

X_n, Y_n, Z_n: tristimulus values in XYZ system of perfect reflecting diffuser

Remarks 1. Where Y/Y_n is within 0.008856, L^* shall be obtained from the following formula:

$$L^* = 903.29(Y/Y_n) \qquad \text{(4)}$$

Where any one of X/X_n, Y/Y_n, and Z/Z_n has a value of within 0.008856, calculation shall be carried out by substituting the corresponding term of cubic root in formula (3) with $7.787(X/X_n) + 16/116$, $7.787(Y/Y_n) + 16/116$, or $7.787(Z/Z_n) + 16/116$.

2. The relations between L^* and Y/Y_n based on formulae (2) and (4) are shown in Attached Table 1.

3. The table of numbers for carrying out the calculations shown in formula (3) and Remark 1 is shown in Attached Table 2.

6.2 Colour Difference Based on $L^*u^*v^*$ Colour System The colour difference based on the $L^*u^*v^*$ colour system shall be calculated from the following formula:

$$\Delta E^*_{uv} = ((\Delta L^*)^2 + (\Delta u^*)^2 + (\Delta v^*)^2)^{1/2} \qquad \text{(5)}$$

where ΔE^*_{uv}: colour difference based on $L^*u^*v^*$ colour system

ΔL^*, Δu^*, Δv^*: differences in psychometric lightness L^* and psychometric chroma coordinates u^* and v^* between two material colours in $L^*u^*v^*$ colour system specified in JIS Z 8729.

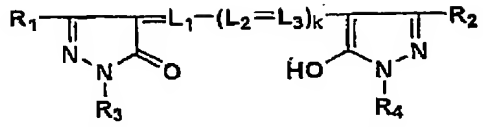
The values of L^*, u^*, and v^* shall be calculated from the tristimulus values X, Y, and Z specified in JIS Z 8722 or JIS Z 8727 according to the following formulae:

$$L^* = 116(Y/Y_n)^{1/3} - 16 \quad Y/Y_n > 0.008856 \qquad \text{(2)}$$

$$\left.\begin{aligned} u^* &= 13L^*(u' - u_n') \\ v^* &= 13L^*(v' - v_n') \end{aligned}\right\} \qquad \text{(6)}$$

$$\left.\begin{aligned} u' &= 4X/(X + 15Y + 3Z) \\ v' &= 9Y/(X + 15Y + 3Z) \end{aligned}\right\} \qquad \text{(7)}$$

一般式〔1〕



〔式中、R_1、R_2は各々－CN、－COR_5、－$COOR_6$又は－$CONR_7R_8$を表し、R_3、R_4は各々水素原子、アルキル基、シクロアルキル基、アリール基又はヘテロ環基を表し、L_1、L_2、L_3は各々メチン基を表し、kは2を表し、各々－L_2＝L_3－は同一でも異なっていてもよい。R_5、R_6は水素原子、アルキル基又はアリール基を表す。R_7、R_8は各々水素原子、アルキル基、アルケニル基、アリール基又はヘテロ環基を表し、R_7、R_8と隣接の窒素原子とで5員環あるいは6員環を形成してもよい。ただし、R_7とR_8が同時に水素原子となることはない。又、R_1、R_2、R_3、R_4の少なくとも1個は水溶性基又は水溶性基を含む基である。〕

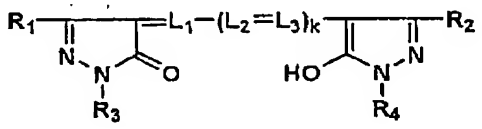
（2） ハロゲン化銀写真感光材料を露光、現像処理する画像形成方法において、露光が光ビームによる走査露光であり、かつ現像処理後の白色部をＪＩＳ－Ｚ－８７２２で規定される測定方法に従い測定した、ＪＩＳ－Ｚ－８７３０で規定される知覚色度指数a及びbが、それぞれ０．０～＋２．０及び－２．２～－４．０の範囲であることを特徴とする画像形成方法。

（3） ハロゲン化銀写真感光材料を露光、現像処理する画像形成方法において、該ハロゲン化銀写真感光材料が、前記一般式〔1〕で示される化合物を少なくとも一種含有し、露光が光ビームによる走査露光であり、かつ現像処理後の白色部をＪＩＳ－Ｚ－８７２２で規定される測定方法に従い測定した、ＪＩＳ－Ｚ－８７３０で規定される知覚色度指数a及びbが、それぞれ０．０～＋２．０及び－２．２～－４．０の範囲であることを特徴とする画

請求の範囲

1． ハロゲン化銀写真感光材料を露光、現像処理する画像形成方法において、該ハロゲン化銀写真感光材料が、下記一般式〔1〕で示される化合物を少なくとも一種含有し、かつ現像処理後の白色部をＪＩＳ－Ｚ－８７２２で規定される測定方法に従い測定した、ＪＩＳ－Ｚ－８７３０で規定される知覚色度指数ａ及びｂが、それぞれ０．０～＋２．０及び－２．２～－４．０の範囲であることを特徴とする画像形成方法。

一般式〔1〕



〔式中、R_1、R_2は各々－ＣＮ、－ＣＯＲ$_5$、－ＣＯＯＲ$_6$又は－ＣＯＮＲ$_7$Ｒ$_8$を表し、R_3、R_4は各々水素原子、アルキル基、シクロアルキル基、アリール基又はヘテロ環基を表し、L_1、L_2、L_3は各々メチン基を表し、ｋは２を表し、各々－L_2＝L_3－は同一でも異なっていてもよい。R_5、R_6は水素原子、アルキル基又はアリール基を表す。R_7、R_8は各々水素原子、アルキル基、アルケニル基、アリール基又はヘテロ環基を表し、R_7、R_8と隣接の窒素原子とで５員環あるいは６員環を形成してもよい。ただし、R_7とR_8が同時に水素原子となることはない。又、R_1、R_2、R_3、R_4の少なくとも１個は水溶性基又は水溶性基を含む基である。〕

2． ハロゲン化銀写真感光材料を露光、現像処理する画像形成方法におい